digital

FIELD CHANGE ORDER

FCO VAX R 0003 PAGE 1 of 12

Level of Urgency (LOU)

APPLICABILITY

RETROFIT ALL VAX 11/780'S AT SYSTEM REVISION LEVEL 2 OR EARLIER TO SYSTEM REVISION LEVEL 3.

MINIMUM ACCEPTABLE REVISION LEVELS FOR SPARES STOCK ARE: M8224, ETCH REVISION "B", CS REVISION "D" AND M8235, ETCH REVISION "D", CS REVISION "K".

FCO EXPENSE RESPONSIBILITY

STATUS / LOU	WARRANTY	K	PER CALL
Mandatory	DIGITAL		
Required			CUST
Specification			CUST
Improvement			CUST
Hardware Option	PURCHASEABLE OPTION		
Cosmetic	CUST	CUST	CUST

On-site FCO installation, by DEC, will be in accordance with both APPLICABILITY and the above FCO EXPENSE RESPONSIBILITY matrix.

ESTIMATED TIME TO INSTALL and TEST (on-site) (Travel time not included)

1.0 DECIMAL HOURS

QUICK CHECK (To determine if FCO has been installed) PRESENCE OF 23-039C6 CHIP IN LOCATION E122 OF M8235 AND OF 23-473F1 IN LOCATION E99 OF M8224.

LAST PREVIOUS FCO s: VAX-R01

RELATED OR PREREQUISITE FCO s / MCO s

VAX-R01

SPECIAL TEST EQUIPMENT, TOOLS, or SUPPLIES (Not included in the Field Retrofit Kit)

NONE

FIELD INSTALLATION and TEST PROCEDURE

SEE PAGES 2 THRU 13 OF THIS FCO.

FCO KIT CHARGES (United States and Canada only)

KIT ITEM	DOCUMENTATION	PARTS	OTHER
	☒ FCO ☐ PRINTS NONE $10.00	::	

Parts charges are as of FCO release date and are subject to change.

PARTS AVAILABILITY DATE DECEMBER 1979

LOGISTICS CODING 850 800 1K

LOGISTICS REVIEW 2/Nov 79

QTY	PART NUMBER	DESCRIPTION
1	M8224	ETCH REVISION "B", CS REVISION "D" OR LATER
1	23-039C6	FPLA CHIP
32	12-14314	CONNECTORS, 2 POSITIVE, BLUE
1	90-08356-00	BRADY MARKERS, 10 DIFFERENT LETTERS, 1 CARD EACH: A,B,C, D,E,F,H,J,K,L

ORDER BY THIS NUMBER	KIT INCLUDES FCO	PRINTS	PARTS
EQ-01003-00	X		X
FA-04203-00	X		

::PARTS PRICE UNDETERMINED AT DATE OF FCO RELEASE.

NOTE: THIS FCO INCORPORATES ECO M8224-00003, ECO M8235-00007 AND FCO VAX-R0002.
COMPATIBILITY NOTE: THIS FCO MUST BE INSTALLED BEFORE VMS RELEASE 2 WILL RUN ON THE SYSTEM.
PROBLEM SYMPTOM: VMS RELEASE 2 WILL NOT RUN.

APPROVED - Field Service Product Support

JERRY NELSON

VAX

LKQ 5/11

FCO RELEASE DATE

NOVEMBER 2, 1979

REWORK PROCEDURE
FOR
FCO VAX-R0003

NOTE: VERIFY INSTALLATION OF FCO'S VAX-R0001 AND VAX-R0002 BEFORE ATTEMPTING TO INSTALL THIS FCO. M8235 MUST BE AT ETCH REVISION "D", CS REVISION "H". IF THE SYSTEM REVISION LEVEL IS NOT IDENTIFIED IN THE SYSTEM IDENTITY REGISTER, PERFORM PART B OF THIS REWORK PROCEDURE.

PART A: INSTALL ON ALL VAX 11/780'S

1. POWER DOWN THE VAX 11/780.
2. REMOVE M8235 FROM SLOT 23.
3. REMOVE AND DISCARD FPLA CHIP, 23-022C6, IN LOCATION E122.
4. INSTALL NEW FPLA CHIP, 23-039C6, IN LOCATION E122.
5. USE BRADY MARKER TO MARK-UP M8235 SO AS TO INDICATE NEW CS REVISION "K".
6. INSERT M8235 INTO SLOT 23.
7. REMOVE AND DISCARD M8224 FROM SLOT 8.
8. INSERT NEW M8224, ETCH REVISION "B", CS REVISION "D" OR LATER INTO SLOT 8.
9. USE BRADY MARKER TO MARK-UP M8224 SO AS TO INDICATE NEW CS REVISION "D".

PART B: REWORK PROCEDURE FROM FCO VAX-R0002. INSTALL ONLY IF FCO VAX-R0002 HAS NOT BEEN PREVIOUSLY INSTALLED ON THE SYSTEM.

QUICK CHECK: SYSTEM IDENTITY REGISTER DOES NOT READ ALL 1'S.

IF SYSTEM IDENTITY REGISTER DOES NOT READ ALL ONES, PROCEED TO PART C.

WIRE THE 11/780 SYSTEM REVISION INTO THE SYSTEM IDENTITY REGISTER ALONG WITH THE PLANT CODE AND THE SERIAL NUMBER. THIS WILL ALLOW VMS TO DETERMINE WHICH ECO/FCO'S HAVE BEEN INSTALLED AND TO REPORT POSSIBLE INCOMPATIBILITIES BETWEEN THE HARDWARE AND THE SOFTWARE. IN ADDITION, REMOTE DIAGNOSIS CAN USE THE REGISTER TO CHECK FOR POSSIBLE DIAGNOSTIC INCOMPATIBILITIES.

THIS FCO JUMPERS THE "SYSID" REGISTER TO PROVIDE THE CORRECT SERIAL NUMBER AND REVISION INFORMATION. THE FORMAT FOR THE SYSTEM ID REGISTER (ID 03) IS AS FOLLOWS:

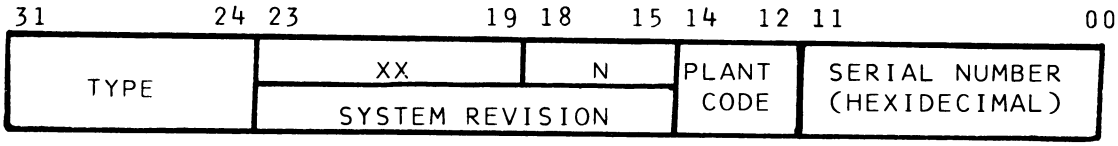


FIGURE 1. SYSTEM ID REGISTER FORMAT

THE SYSTEM ID REGISTER BITS ARE SELECTED FROM JUMPERS ON THE KA780 BACKPANEL. AN INSERTED JUMPER DECODES AS A "ZERO". NO JUMPER DECODES AS A "ONE". THE SYSTEM ID REGISTER IS ACCESSIBLE FROM THE CONSOLE BY READING ID REGISTER #03 OR BY EXECUTING AN MFPR INSTRUCTION FROM PROCESSOR REGISTER #3E.

FIGURE 2 SHOWS THE SYSTEM IDENTITY REGISTER FOR MACHINES CURRENTLY AT REVISION LEVEL #2 AS VIEWED FROM THE CONSOLE. (U.S. MACHINES ONLY. GALWAY MACHINES WILL HAVE THE FOURTH HEX DIGIT AS A "1".)

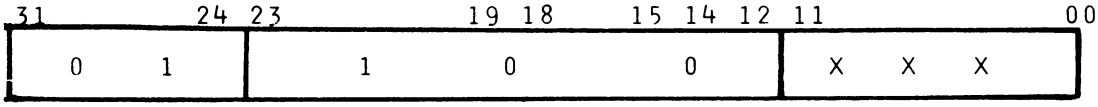


FIGURE 2. SYSID REGISTER AT CONSOLE

TYPE=01 — THIS DENOTES VAX 11/780 PROCESSOR WITH VALID "SYSID" REGISTER INFORMATION.

SYSTEM REVISION — THE XX FIELD DENOTES HARDWARE REVISION LEVEL OF THE VAX 11/780. SHOULD BE 02 FOR THIS REVISION LEVEL. THE N FIELD DENOTES THE NON-FUNCTIONAL LEVEL. (THE N FIELD WILL BE USED BY VOLUME MANUFACTURING AND FIELD SERVICE TO DENOTE HARDWARE CHANGES WHICH DO NOT AFFECT VMS.)

PLANT — 0=NI (SALEM OR DERRY)
1=GA (GALWAY)

SERIAL NUMBER — THIS IDENTIFIES THE SERIAL NUMBER OF THE KA780 PROCESSOR. IT IS THE THREE DIGIT DECIMAL NUMBER FOUND ON THE REAR CROSSBAR OF THE MACHINE (DECIMAL NUMBER). CONVERT THIS NUMBER TO BINARY AND THEN JUMPER IT ONTO THE BACKPANEL. (DO NOT CONVERT DECIMAL NUMBER TO BCD.)

THE FOLLOWING TABLE SHOWS THE RELATIONSHIP BETWEEN THE BACKPANEL JUMPERS AND THE SYSTEM ID REGISTER BITS:

SERIAL NUMBER:

BIT 00 JUMPER J13-VV TO UU
BIT 01 JUMPER J13-TT TO SS
BIT 02 JUMPER J13-RR TO PP
BIT 03 JUMPER J13-NN TO MM
BIT 04 JUMPER J13-LL TO KK
BIT 05 JUMPER J13-JJ TO HH
BIT 06 JUMPER J13-FF TO EE
BIT 07 JUMPER J13-DD TO CC
BIT 08 JUMPER J13-BB TO AA
BIT 09 JUMPER J13-Z TO Y
BIT 10 JUMPER J13-X TO W
BIT 11 JUMPER J13-V TO U

PLANT CODE:

BIT 12 JUMPER J13-T TO S
BIT 13 JUMPER J13-R TO P
BIT 14 JUMPER J13-N TO M

NN FIELD:

BIT 15 JUMPER J13-L TO K
BIT 16 JUMPER J13-J TO H
BIT 17 JUMPER J13-F TO E
BIT 18 JUMPER J13-D TO C

XX FIELD:

BIT 19 JUMPER J13-B TO A
BIT 20 JUMPER J12-VV TO UU
BIT 21 JUMPER J12-TT TO SS
BIT 22 JUMPER J12-RR TO PP
BIT 23 JUMPER J12-NN TO MM

TYPE:

BIT 24 JUMPER J12-LL TO KK
BIT 25 JUMPER J12-JJ TO HH
BIT 26 JUMPER J12-FF TO EE
BIT 27 JUMPER J12-DD TO CC
BIT 28 JUMPER J12-BB TO AA
BIT 29 JUMPER J12-Z TO Y
BIT 30 JUMPER J12-X TO W
BIT 31 JUMPER J12-V TO U

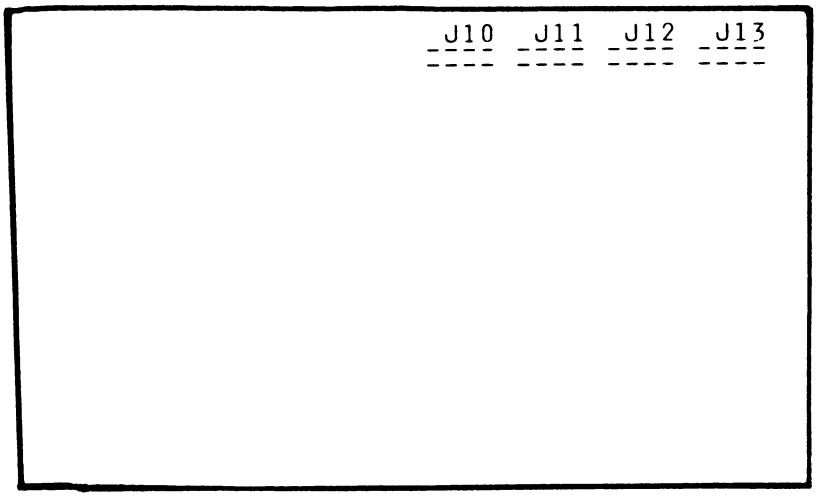


FIGURE 3. LOCATION OF JUMPERS ON THE KA780 BACKPANEL

EXPANDED VIEW OF J12&J13

B	D	F	J	L	N	R	T	V	X	Z	BB	DD	FF	JJ	LL	NN	RR	TT	VV
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
A	C	E	H	K	M	P	S	U	W	Y	AA	CC	EE	HH	KK	MM	PP	SS	UU

NOTE: BOTTOM PINS ARE ON THE GROUND PLANE. JUMPER APPROPRIATE PINS TO GROUND PLANE.

IDENTIFY THE 3 DIGIT SERIAL NUMBERS OF THE KA780, THE PLANT CODE, AND THE SYSTEM REVISION LEVEL.

A. LOCATE THE SERIAL NUMBER ON THE REAR CROSSBAR OF THE MACHINE.

B. ALL MACHINES WITHOUT THIS FCO INSTALLED IN MANUFACTURING ARE SALEM (0).

C. TO DETERMINE SYSTEM REVISION LEVEL, REFER TO THE VAX REVISION MICROFICHE, EP-VXREV-MS, (PURPLE HEADER) IN THE VAX HARDWARE DOCUMENTATION MICROFICHE LIBRARY. IT CONTAINS MODULE REVISION INFORMATION AND QUICK CHECKS FOR EACH SYSTEM OPTION.

CONVERT THE DECIMAL NUMBERS TO BINARY.

SELECT THE JUMPERS ON J12 AND J13 OF THE KA780 BACKPANEL TO DECODE THE CORRESPONDING BITS AS "0". INSTALL A JUMPER (12-14314) TO GROUND THEM TO THE GROUND PLANE.

INSTALL BRADY MARKERS AS SHOWN IN FIGURE 4.

PART C: INSTALL ON ALL VAX 11/780'S

PLACE BLUE CONNECTORS (12-14314) ON J12 PIN VV AND J13 PIN B OF BACKPANEL TO IDENTIFY SYSTEM REVISION LEVEL 3 IN THE SYSID REGISTER. BITS 19 AND 20 ARE THUS JUMPERED.

RUN DIAGNOSTIC EVKAB.EXE FOR ONE PASS TO VERIFY PROPER OPERATION.

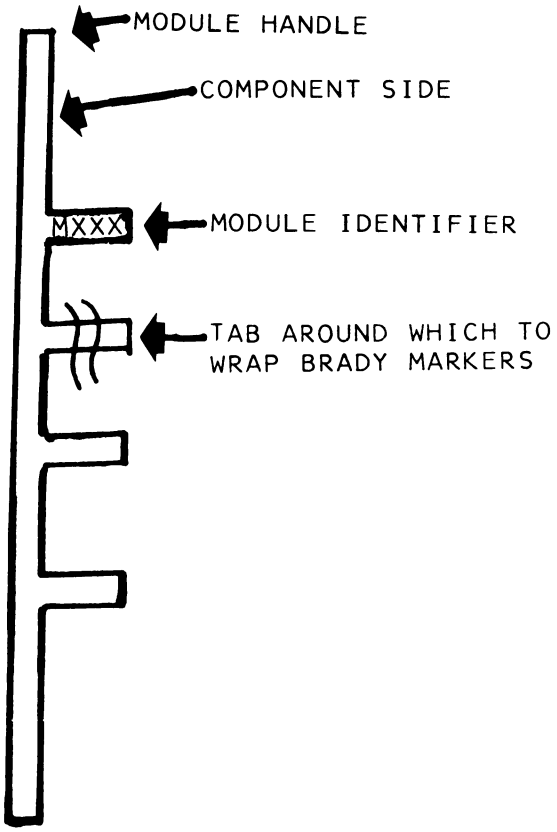
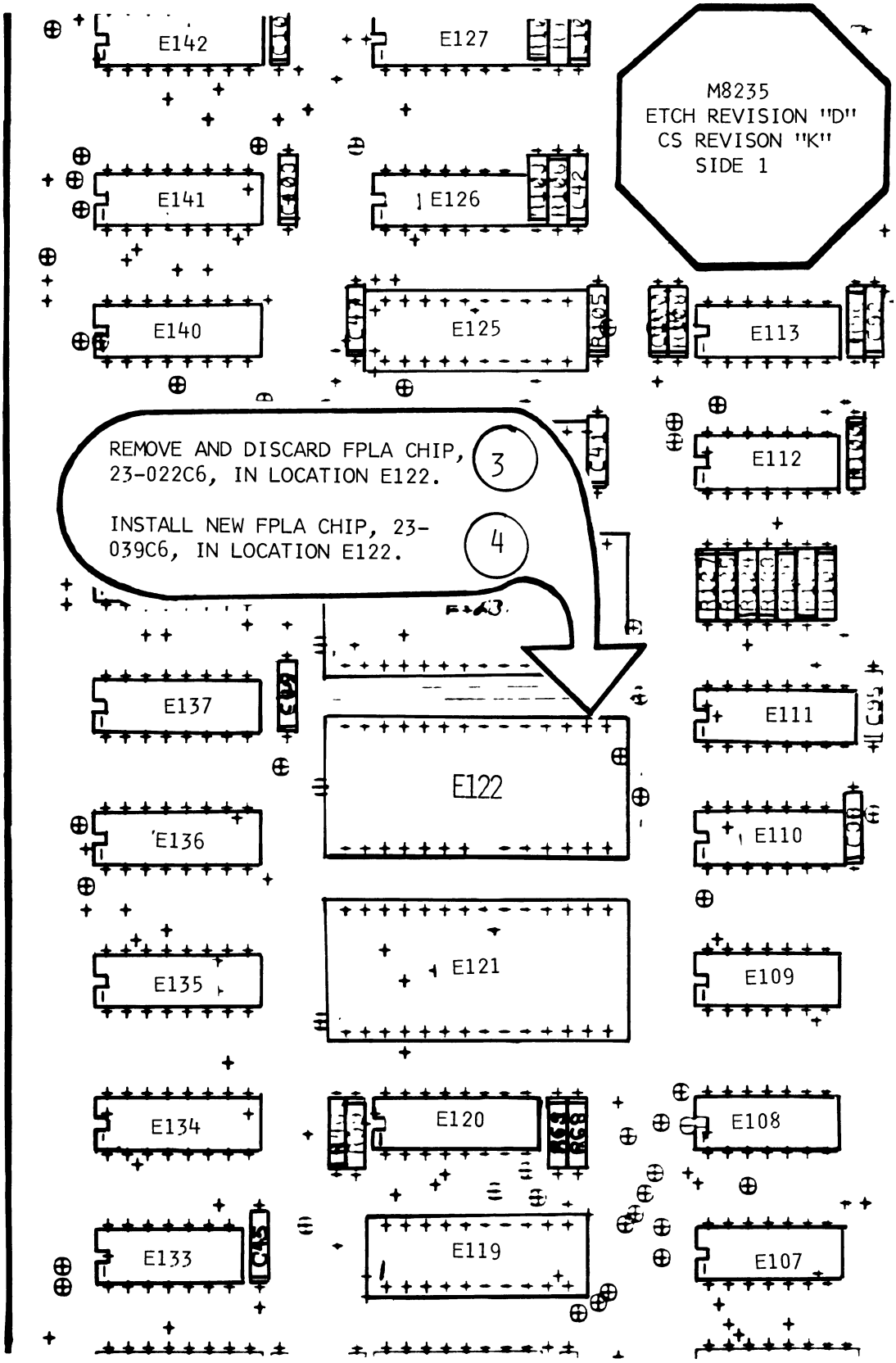


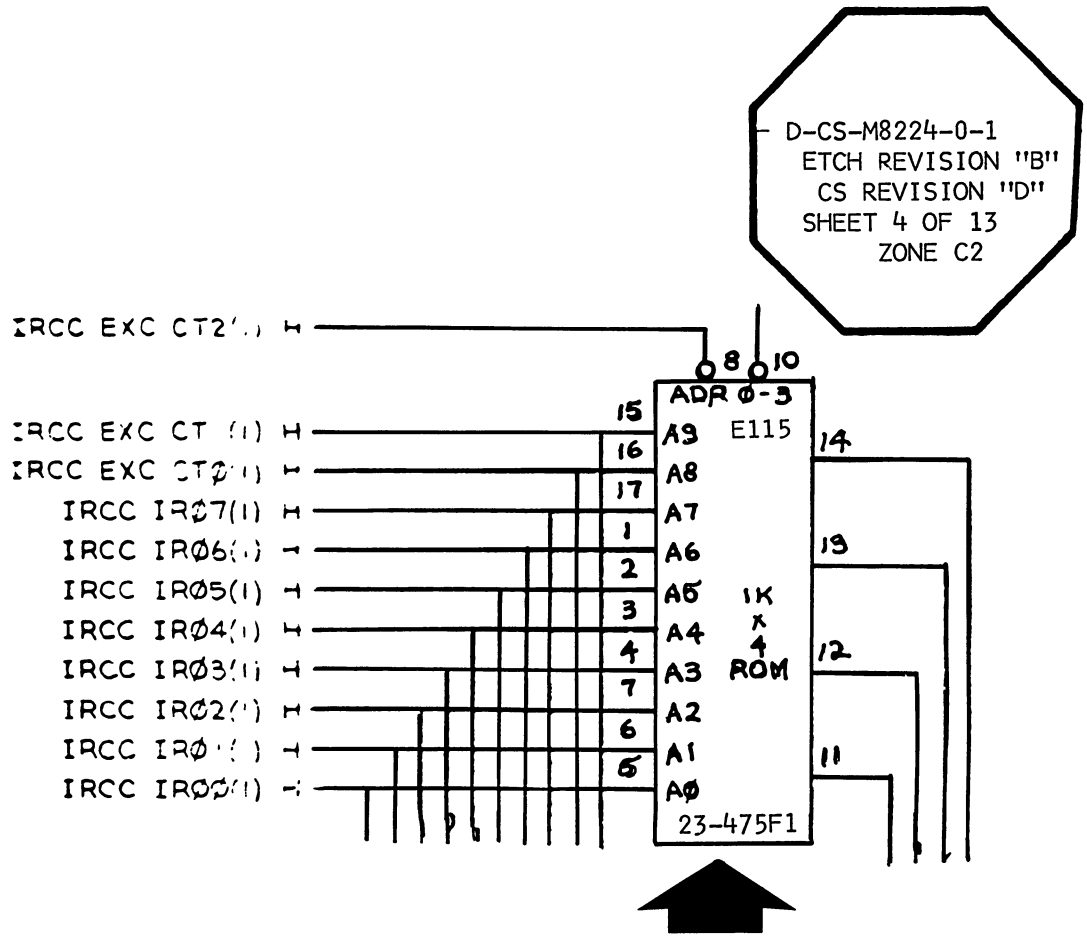
FIGURE 4. LOCATION OF BRADY MARKERS

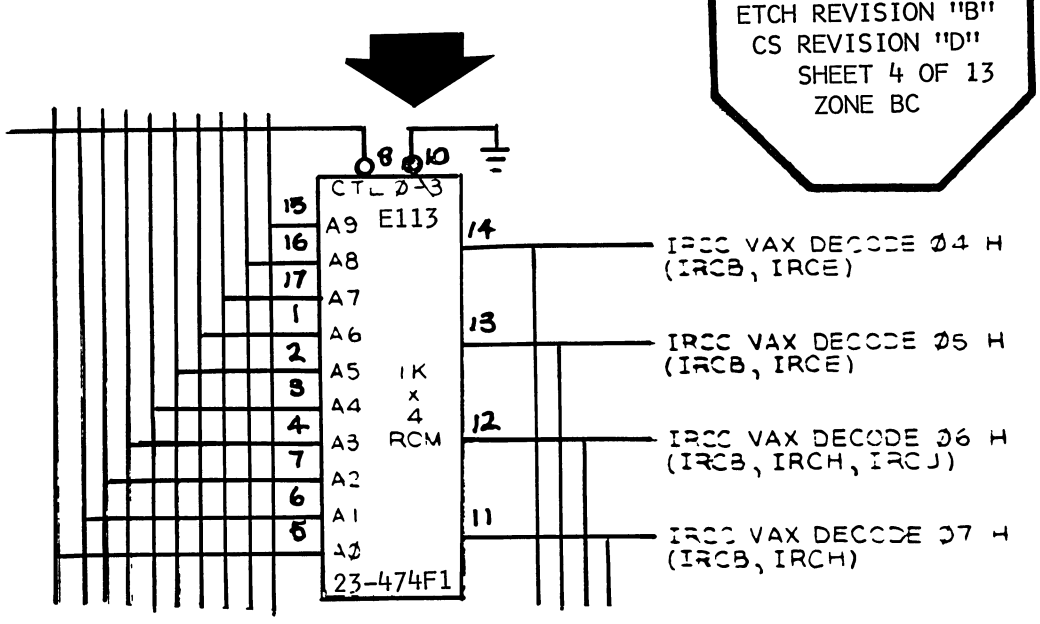
VERIFY THAT THE CORRECT JUMPERS HAVE BEEN INSTALLED BY READING THE SYSID REGISTER FROM THE CONSOLE. IT SHOULD NOW CONTAIN THE CORRECT SYSTEM REVISION LEVEL, PLANT CODE, AND SERIAL NUMBER.

MARK-UP SITE SCHEMATICS SO AS TO INDICATE PROPER REVISION LEVEL. SEE PAGES OF THIS FCO.

REPORT INSTALLATION OF THIS FCO ON LARS.


E142
E127
M8235
ETCH REVISION "D"
CS REVISON "K"
SIDE 1
E141
E126
E140
E125
E113
REMOVE AND DISCARD FPLA CHIP, 23-022C6, IN LOCATION E122.
3
INSTALL NEW FPLA CHIP, 23-039C6, IN LOCATION E122.
4
E112
E137
E111
E122
E136
E110
E121
E135
E109
E134
E120
E108
E133
E119
E107

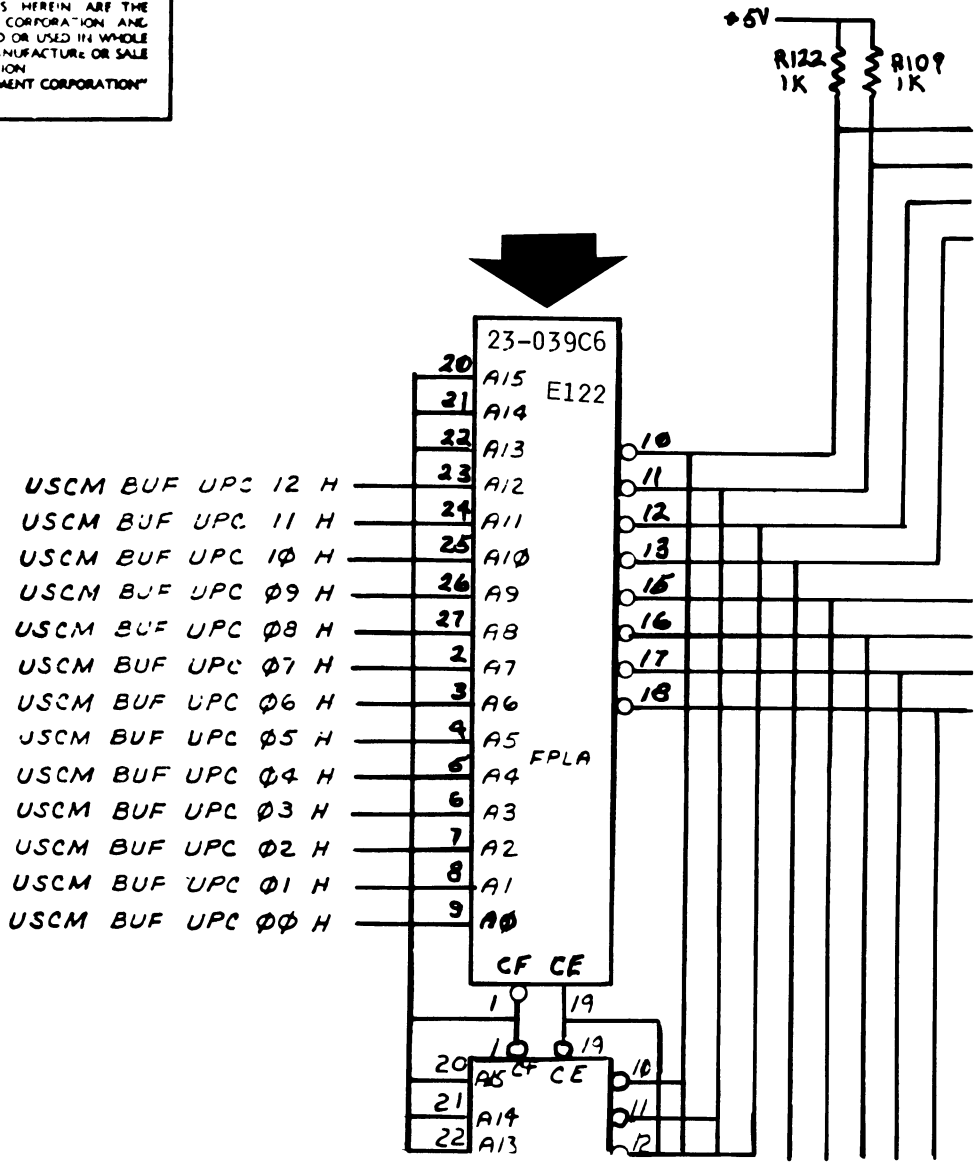

D-CS-M8224-0-1
ETCH REVISION "B"
CS REVISION "D"
SHEET 4 OF 13
ZONE C2
IRCC EXC CT2(1) H
IRCC EXC CT1(1) H
IRCC EXC CT0(1) H
IRCC IRØ7(1) H
IRCC IRØ6(1) H
IRCC IRØ5(1) H
IRCC IRØ4(1) H
IRCC IRØ3(1) H
IRCC IRØ2(1) H
IRCC IRØ1(1) H
IRCC IRØØ(1) H
8
10
ADR Ø-3
E115
15
16
17
1
2
3
4
7
6
5
A9
A8
A7
A6
A5
A4
A3
A2
A1
AØ
14
13
12
11
1K
x
4
ROM
23-475F1

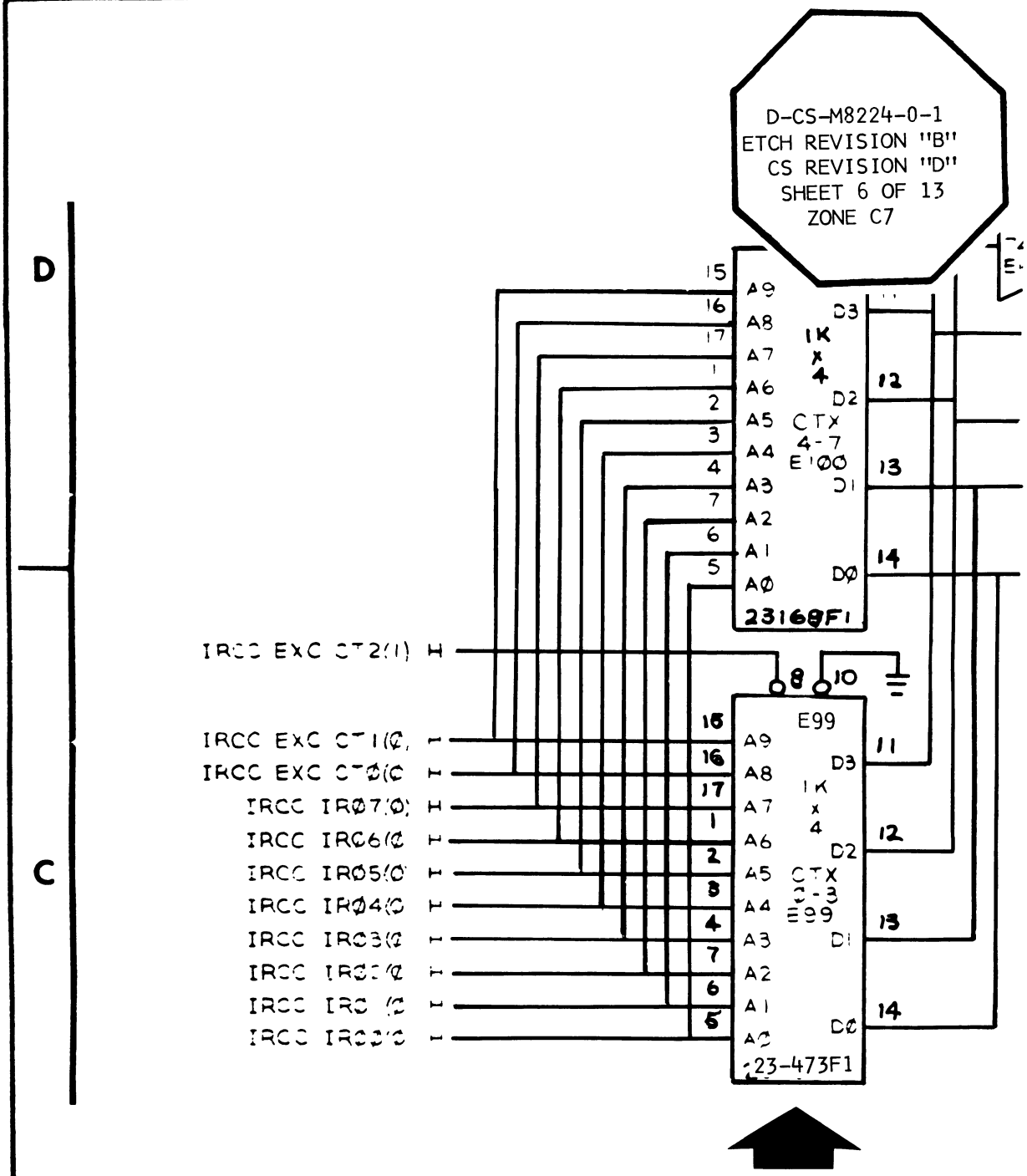

D-CS-M8224-0-1
ETCH REVISION "B"
CS REVISION "D"
SHEET 4 OF 13
ZONE BC
8
10
CTL Ø-3
E113
15
16
17
1
2
3
4
7
6
5
A9
A8
A7
A6
A5
A4
A3
A2
A1
AØ
14
13
12
11
1K
x
4
RCM
23-474F1
IRCC VAX DECODE Ø4 H
(IRCB, IRCE)
IRCC VAX DECODE Ø5 H
(IRCB, IRCE)
IRCC VAX DECODE Ø6 H
(IRCB, IRCH, IRCJ)
IRCC VAX DECODE Ø7 H
(IRCB, IRCH)

D-CS-M8235-0-1
ETCH REVISION "D"
CS REVISION "K"
SHEET 7 OF 17
ZONE C7

7

ICATIONS HEREIN ARE THE
PMENT CORPORATION AND
OR COPIED OR USED IN WHOLE
THE MANUFACTURE OR SALE
PERMISSION
EQUIPMENT CORPORATION"




D-CS-M8224-0-1
ETCH REVISION "B"
CS REVISION "D"
SHEET 6 OF 13
ZONE C7
D
C
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
D3
D2
D1
D0
1K
x
4
CTX
4-7
E100
23168F1
E99
CTX
0-3
23-473F1
IRCC EXC CT2(1) H
IRCC EXC CT1(C, H
IRCC EXC CT0(C H
IRCC IR07(0) H
IRCC IR06(C H
IRCC IR05(C H
IRCC IR04(C H
IRCC IR03(C H
IRCC IR02(C H
IRCC IR01(C H
IRCC IR00(C H

digital

MODULE ECO HISTORY

ECO HISTORY - M8224									
ETCH BOARD REVISION	B								
ECO NUMBER		001	002	R03					
ECO DATE	7-77	8-77	1-79	10-79					
PRODUCTION CS	A	B	C	D					
DOCUMENTATION CS									
FIELD REWORK CS			C*	D***					
NOTES:	*REWORK INCLUDED IN FCO VAX-R0001. ***REWORK INCLUDED IN FCO VAX-R0003.								

ECO HISTORY -									
ETCH BOARD REVISION									
ECO NUMBER									
ECO DATE									
PRODUCTION CS									
DOCUMENTATION CS									
FIELD REWORK CS									
NOTES:									

ECO HISTORY -									
ETCH BOARD REVISION									
ECO NUMBER									
ECO DATE									
PRODUCTION CS									
DOCUMENTATION CS									
FIELD REWORK CS									
NOTES:									

ECO HISTORY -									
ETCH BOARD REVISION									
ECO NUMBER									
ECO DATE									
PRODUCTION CS									
DOCUMENTATION CS									
FIELD REWORK CS									
NOTES:									

digital

MODULE ECO HISTORY

ECO HISTORY - M8235									
ETCH BOARD REVISION	C								
ECO NUMBER		001	002	003	004				
ECO DATE	2-77	10-77	1-78	3-78	5-78				
PRODUCTION CS	B	C	D	E	E1				
DOCUMENTATION CS									
FIELD REWORK CS									
NOTES:									

ECO HISTORY -									
ETCH BOARD REVISION	D								
ECO NUMBER	004	005							
ECO DATE	5-78	1-79							
PRODUCTION CS	F	H							
DOCUMENTATION CS									
FIELD REWORK CS		H*							
NOTES:	*REWORK INCLUDED IN FCO VAX-R0001.								

ECO HISTORY -									
ETCH BOARD REVISION	E								
ECO NUMBER	006	007							
ECO DATE	8-79	10-79							
PRODUCTION CS	J	K							
DOCUMENTATION CS									
FIELD REWORK CS		* K**							
NOTES:	*BY EXCHANGE IN THE FIELD. **THIS ECO INCLUDED IN REWORK FOR FCO VAX-R0003.								

ECO HISTORY -									
ETCH BOARD REVISION									
ECO NUMBER									
ECO DATE									
PRODUCTION CS									
DOCUMENTATION CS									
FIELD REWORK CS									
NOTES:									